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Poland-Atmospheric Polarization and Solar Radiation:

1. "Atmospheric Polarization and Solar Radiation", by Wladyslaw Smosarski
in Przegląd Meteorologiczny i Hydrologiczny /the Meteorological and Hydrological
Review/, 1950-1951 Yearbook, Warsaw, pp 148-165. 25X1
2. This paper does not present any new material or insights. It is mostly a digest
of pre-World War II material (observations taken between August 1927 and 1939).
Apparently, Dr Smosarski has either not been able to make new observations, or in
view of his advanced age (c. 70 yrs of age) has taken these unutilized obser-
vations and analyzed them for publication while the opportunity still exists. 25X1
3. No indications are contained in the paper of the use of new equipment developed
in recent years (eg, automatic light trackers, giving an objective record not
subject to eye errors). Dr Smosarski used standard (visual) equipment when I
first knew of his work, and apparently has no new equipment available to him.
4. Dr Smosarski's general approach to his subject is also different from current
[1954] US practice. He discusses monthly and seasonal mean variations, whereas
contemporary practices seek explanations for daily variations.
5. There are also incorrect ideas put forward in his article. For example, with
reference to the scattering of light in the atmosphere, he considers the atmosphere
more or less a continuum with the same characteristics as a single particle. The
consensus of present-day theory maintains firmly that the atmosphere must be
treated as the sum of particles of different characteristics. When these are
added together, the characteristics of the atmosphere are not the same as those
of a single particle.
6. In general, his discussion is extremely primitive as compared with current US
research. By way of illustration, US scientists are trying to establish the same

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type of relationship Dr Smosarski deals with in Table I (Coefficients of correlation for every month to express quantitatively the relationship between the degree of polarization of atmospheric light, actinometric radiation of the sun, and vapor pressure). But his results are quite obvious: namely, that skylight polarization is more directly related to solar radiation than to humidity. What is more vital is the study of this correlation from day to day (rather than month to month or seasonal), and the determination of better parameters than humidity. If Dr Smosarski understood the subject better, he would not relate solar radiation and vapor pressure. 25X1

7. This is basic research. There are no direct or indirect indications of military implications in the background. It is interesting only to the extent that Dr Smosarski made the skylight polarization measurements, and has attempted to analyze and discuss them. There are relatively few people in Europe working in this field. 25X1

8. Besides Smosarski, there is Gerhard Dietze (Dipl. Met.") in Germany (Sov Zone), a younger man probably just finishing his Ph D 25X1

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